

and repair of the various "automata" in use in any household, farm, office, or plant. Consequently, the teaching of physics will consist of the study of progressively complicated mechanisms of all kinds so as to unravel for the student the multiple automatic or semi-automatic devices. In short, it will be a "technical" study of a number of mechanisms whose selection will be determined by the relative importance given to the various necessities of life.

If one approaches the subject from the philosophical point of view, then emphasis falls on the role science has played and is playing in our civilization. The method of teaching relevant here has been described by James B. Conant in an illuminating article¹ where he states that "the understanding of science by a layman can be best achieved through a few relatively simple case histories in which the four following points would be illustrated:

- a. The influence of new techniques of experimentation and their connection with practical arts.
- b. The evolution of new concepts from experiment.
- c. The difficulties of experimentation and the significance of controlled experiment.
- d. The development of science as an organized social activity."

From the standpoint of the third category, the "psychological" point of view, physics becomes not the goal but a means of learning, leading to the development of a scientific method of approach to all types of human activities. This point of view — in which I am interested — is substantiated by two considerations. First, the present interest of scientific investigation seems to center upon the study of "man" and his relations with the surrounding media, a study, I may say, undertaken by means of scientific method. (The second consideration is the appearance of the "borderline" sciences which have been developing along with the present tendency to revert to "universality.")

As a matter of fact, we seem to have progressed very far in our knowledge of the physical world consisting of "periodic crystals," but we seem very far behind in understanding the living organisms formed essentially by "aperiodic crystals."² (The study of the functioning of cells remained for a long time in the purely descriptive or cataloging stage.) It is only within recent decades that some progress has been made — for which we are mainly indebted to the physicists, chemists, and mathematicians who migrated into the fields of biology, physiology, and neurology.

The results of this "transference" of scientific technique brought about by the invasion of one field with the technique of another are quite surprising. Before this transference, certain separate mechanisms underwent exhaustive investigation and were thoroughly understood. Then it became clear that the understanding of a phenomenon as a whole could not be carried out by specialists in one field. Finally there began to take place a mergence of the work of different specialists, each offering the interpretation of some aspect of the multifold manifestations of the same mechanism. This tendency grew more and more apparent as the mechanism under consideration increased